

CLAIMS:

1. A vehicle safety system for impeding the egress of an occupant of a vehicle, the safety system comprising:

5 a safety barrier mounted to a vehicle, the barrier comprising:

a first stowed position wherein an exit of the vehicle is substantially uncovered by the safety barrier such that an occupant of the vehicle may egress through the exit substantially unimpeded by the safety barrier, and

10 a first deployed position wherein the safety barrier covers at least a portion of the exit in order to impede the occupant's egress through the exit.

15 2. The vehicle safety system of claim 1, wherein the safety barrier comprises a passive barrier.

3. The vehicle safety system of claim 2, wherein the passive barrier is configured to be continuously positioned in the first deployed position during operation of the vehicle.

15 4. The vehicle safety system of claim 3, wherein the passive barrier is configured to provide the occupant with visibility sufficient to operate the vehicle in accordance with applicable safety standards.

20 5. The vehicle safety system of claim 4, wherein the passive barrier is configured to be locked in the deployed position.

6. The vehicle safety system of claim 4, further comprising locking means to lock the passive barrier in the first deployed position.

25 7. The vehicle safety system of claim 4, wherein the passive barrier comprises a net.

8. The vehicle safety system of claim 4, wherein the passive barrier is movable manually between the first stowed position and the first deployed position.

25 9. The vehicle safety system of claim 4, further comprising a mechanical device, wherein the mechanical device is configured to move the passive barrier between the first stowed position and the first deployed position.

30 10. The vehicle safety system of claim 9, wherein the occupant may actuate the mechanical device to move the passive barrier between the first stowed position and the first deployed position.

11. The vehicle safety system of claim 10, wherein the mechanical device comprises a motor.

12. The vehicle safety system of claim 9, wherein the mechanical device comprises a retractor.

5 13. The vehicle safety system of claim 3, further comprising a retractor, and a motor,

wherein the retractor and the motor cooperate to move the barrier between the first stowed position and the first deployed position.

10 14. The vehicle safety system of claim 1, further comprising: a control system, and a mechanical device, wherein the control system is configured to actuate the mechanical device to move the barrier between the first stowed position and the first deployed position.

15 15. The vehicle safety system of claim 14, wherein the safety barrier is a passive barrier and wherein the control system is configured to lock the passive barrier in the first deployed position.

20 16. The vehicle safety system of claim 15, further comprising a reactive safety barrier mounted to the vehicle, the reactive barrier comprising a second stowed position that leaves the exit of the vehicle substantially uncovered by the reactive barrier and a second deployed position that covers at least a portion of the exit in order to impede the occupant's egress through the exit, wherein the control system deploys the reactive barrier from the second stowed position to the 25 second deployed position in response to the occurrence of a defined event.

17. The vehicle safety system of claim 16, wherein the reactive barrier comprises an inflatable barrier.

18. The vehicle safety system of claim 16, wherein the inflatable barrier comprises a tube.

30 19. The vehicle safety system of claim 16, wherein the inflatable barrier comprises a curtain.

20. The vehicle safety system of claim 16, wherein the inflatable barrier comprises a curtain and a tube in combination.

21. The vehicle safety system of claim 1, further comprising a control system,

wherein the safety barrier is a reactive safety barrier comprising a second stowed position that leaves the exit of the vehicle substantially uncovered by 5 the reactive barrier and a second deployed position that covers at least a portion of the exit in order to impede the occupant's egress through the exit, and

wherein the control system deploys the reactive barrier from the second stowed position to the second deployed position in response to the occurrence of a defined event.

10 22. The vehicle safety system of claim 21, wherein the reactive barrier comprises an inflatable barrier.

23. The vehicle safety system of claim 21, wherein the inflatable barrier comprises a tube.

15 24. The vehicle safety system of claim 21, wherein the inflatable barrier comprises a curtain.

25. The vehicle safety system of claim 21, wherein the inflatable barrier comprises a curtain and a tube in combination.

26. The vehicle safety system of claim 22, further comprising an inflator in fluid communication with the barrier, and wherein the control system 20 signals the inflator to inject fluid into the barrier in order to move the inflatable barrier from the second stowed position to the second deployed position upon the occurrence of the defined event.

27. The vehicle safety system of claim 26, wherein the control system comprises one or more sensors configured to detect the defined event.

25 28. The vehicle safety system of claim 27, wherein the one or more sensors comprises a roll sensor.

29. A vehicle safety system comprising:

a vehicle comprising

30 an exit generally defined by a top member connected to a pair of spaced apart side members,

a first safety barrier mounted to the exit, the barrier comprising

a first stowed position wherein the exit of the vehicle is substantially uncovered by the first safety barrier such that an occupant of the

vehicle may egress through the exit substantially unimpeded by the first safety barrier, and

5 a first deployed position wherein the first safety barrier covers at least a portion of the exit in order to impede the occupant's egress through the exit

a motor mounted to the vehicle and configured to move the safety barrier between the first stowed position and the first deployed position,

10 a retractor mounted to the vehicle and configured to move the safety barrier between the first stowed position and the first deployed position, and

15 a control system configured to command the movement of the safety barrier between the first stowed position and the first deployed position and further configured to lock the safety barrier in the first deployed position,

wherein the first safety barrier is configured for continuous deployment during the operation of the vehicle.

15 30. The vehicle safety system of claim 29 further comprising:

a second safety barrier mounted to the exit, the second safety barrier comprising

20 a second stowed position wherein the exit of the vehicle is substantially uncovered by the second safety barrier such that an occupant of the vehicle may egress through the exit substantially unimpeded by the second safety barrier, and

25 a second deployed position wherein the second safety barrier covers at least a portion of the exit in order to impede the occupant's egress through the exit, and

wherein the control system is further configured to move the second safety barrier from the second stowed position to the second deployed position upon the occurrence of a defined event.

31. A vehicle safety system comprising:

a vehicle comprising

30 an exit generally defined by a top member connected to a pair of spaced apart side members,

a safety barrier mounted to the exit, the safety barrier comprising one or more generally horizontal bladders,

one or more generally vertical bladders,
a stowed position wherein the horizontal and vertical
bladders are substantially devoid of fluid so that the exit of the vehicle is
substantially uncovered by the safety barrier such that an occupant of the vehicle
5 may egress through the exit substantially unimpeded by the safety barrier, and
a deployed position wherein the horizontal and vertical
bladders are substantially full of fluid so that the safety barrier covers at least a
portion of the exit in order to impede the occupant's egress through the exit, and
a control system configured to move the safety barrier from the stowed
10 position to the deployed position upon the occurrence of a defined event.